

CLAIMS

What is Claimed Is:

1. A single continuous structure engaged to a submersible pump and to all associated loads comprising:

- a. a mechanical suspension means acting as a primary load bearing element, said mechanical suspension means being formed into a long cylinder or rope and being spooled into a reel allowing said mechanical suspension means to be played off the reel into a well in a continuous fashion;
- b. a flexible tubular conduit capable of conveying fluids from the submersible pump to the earth's surface having sufficient strength to withstand the pressure of the pumped fluid;
- c. an electrical cable capable of conveying electrical power from the earth's surface to the submersible pump, said cable having insulation means;
- d. a jacket attached to the single continuous structure tightly enough so that the mechanical loads are fully transferred to the mechanical cable as the single continuous structure is installed into the well; and
- e. means to attach the jacket to the single continuous structure automatically as the pump is installed.

2. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the flexible tubular conduit and the electrical cable are attached to the suspension cable continuously.

3. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the flexible tubular conduit and the electrical cable are attached to the suspension cable at periodic intervals.

4. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the mechanical suspension means is made out of a flexible metallic material.

5. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the mechanical suspension means is made out of a flexible non-metallic material.

6. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the mechanical suspension means is a sucker rod made out of a metallic material.

7. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the mechanical suspension means is sucker rod made out of a non-metallic material.

8. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the flexible tubular conduit is made out of plastic.

9. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the flexible tubular conduit is made out of plastic strengthened with metallic or non-metallic fibers.

10. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the electrical cable is armored.

11. A single continuous structure engaged to a submersible pump and to all associated loads according to claim 1 wherein the electrical cable is unarmored

12. A method to install the submersible pump into the well comprising:

- a. engaging the suspension cable, production tubing and electrical cable to the pump;

- b. suspending the pump over the well by the suspension cable;
- c. attaching the flexible production tubing and the electrical cable to the suspension cable starting immediately above the pump;
- d. lowering the pump into the well by playing out the suspension cable, the flexible production tubing and the electrical cable at the same rate each from a separate reel; and
- e. locking the pump and all associated loads at the appropriate depth level in the well.

13. A method to assemble a single continuous structure engaged to a submersible pump and all associated loads according to claim 12 wherein the jacket is wrapped to the single continuous structure automatically as the pump and the associated loads are installed, said jacket comprising non-metallic adhesive tape wrapped in a spiral pattern.

14. A method to assemble a single continuous structure engaged to a submersible pump and all associated loads according to claim 12 wherein a plurality of jackets are attached periodically to the single continuous structure, said jackets comprising clamping means wrapped around the single structure at multiple points.

15. A method to assemble a single continuous structure engaged to a submersible pump and all associated loads according to claim 12 wherein the clamping means are made out of plastic, metal or rubber.